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SUBJECT: Forwards Request 96-04 for Relief from ASME Section XI,1989 Edition,w/addenda re third ten yr ISI interval.

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CATEGORY 1 DOCUMENT

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DUKE POWER

August 5, 1996

U.S. Nuclear Regulatory Commission
Attention Document Control Desk
Washington, DC 20555

Subject: Duke Power Company
Oconee Nuclear Station, Unit 1
Docket No. 50-269
Third Ten Year Inservice Inspection Interval
Request for Relief No. 96-04

Pursuant to 10 CFR 50.55a (a) (3) (ii), attached is a Request for Relief from ASME Section XI, 1989 Edition, with no Addenda. This Request for Relief is to demonstrate that performance of the code-required preservice examinations on upgraded Keowee mechanical systems would result in an excessive burden without a compensating increase in the level of safety.

The Keowee Project was initiated to upgrade and improve Keowee systems in response to NRC Electrical Distribution Systems Functional Inspections (EDSFIs) and Self-Initiated Technical Audits (SITAs) performed from 1992 to 1994. Several Keowee mechanical systems have been upgraded to Duke Piping Class F as a result of the Keowee Project. Upgrading Keowee mechanical systems to Duke Piping Class F has resulted in application of additional, more restrictive programmatic requirements such as ASME Section XI and 10CFR50 Appendix B. ASME Section XI requires retention of documentation of preservice examinations performed on the Keowee mechanical systems in accordance with the applicable construction codes. Since Keowee mechanical piping was not originally constructed under this requirement, little or no records of preservice examinations exist for Keowee mechanical systems.

Performance of preservice examinations on the Keowee mechanical systems will result in excessive burden for several reasons, including: 1) reduces availability of the Keowee Hydro Station as the emergency power source for Oconee Nuclear Station (ONS), 2) achieving accessibility for preservice examinations would require large-scale disassembly of many Keowee components or systems, and 3) the large number of joints in all of these Keowee systems would require excessive time and resources to inspect.

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By applying the inservice testing program to Keowee mechanical systems, the level of health and safety of the public will be increased. In addition, by upgrading the Keowee mechanical systems to Duke Piping Class F, a higher level of quality will be ensured during repairs or replacements within these systems.

If there are any questions or further information is needed you may contact D. A. Nix at (864) 885-3634.

Very truly yours,

J. W. Hampton
Site Vice President

Attachment

xc (w/attch): Mr. D. E. LaBarge
Project Manager
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U. S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. S. D. Ebneter
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission

xc (w/o attch): Mr. M. A. Scott
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OCONEE NUCLEAR STATION
UNIT 3
(KEOWEE HYDRO STATION UNITS 1 & 2)

Request # 96-04

1. Component for which relief is requested:

(a) Name and Number:

1) Keowee Hydro Station Governor Oil System (OG)

2) Keowee Hydro Station Turbine Guide Bearing Oil System (GBO)

3) Keowee Hydro Station Turbine Sump System (TS)

4) Keowee Hydro Station Turbine Generator Cooling Water System (WL)

5) Keowee Hydro Station Governor Air System (AG)

6) Keowee Hydro Station Spiral Case

7) Keowee Hydro Station Air Circuit Breaker Air System (AB)

(b) Function:

1) Provides inventory and motive force for operating the wicket gates, controlling turbine speed, and controlling generator load.

2) Provides the inventory and distribution of bearing lubrication oil for the turbine.

3) Provides for the removal of water in leakage to the turbine sump due to packing cooling water and any other leakage. This function is to prevent sump water height from reaching more than 34 inches, which may result in water contaminating the turbine oil.

4) Provides for heat removal from the turbine and generator bearing lube oil, and the generator housing.

5) Provides the motive force for a start of the Keowee units without AC power.

6) Provides for even distribution of water to the turbine. Provides a structure for mounting of the wicket gates.

7) Provides the motive force to operate the overhead and underground path breakers. Also provides the air to extinguish the arcing caused when the breakers are opened.

(c) ISI Class/Duke Piping Class: ISI Class 3 / Duke Class F

(d) Construction Code and Class: USAS B31.1.0 7/67 edition

ASME Section VIII 1965 Edition, Subsection UW, for the spiral case.

(e) Reference documents (drawing, manuals, etc.)

Flow diagrams (Attachment 1)	1)	KFD-105A-1.1 KFD-105A-2.1
	2)	KFD-101A-1.1 KFD-101A-2.1
	3)	KFD-102A-1.1 KFD-102A-2.1
	4)	KFD-100A-1.1 KFD-100A-2.1
	5)	KFD-104A-1.1 KFD-104A-2.1
	6)	KM-200-0158 KM-200-0016 KM-200-0017 KM-200-0018
	7)	KFD-107A-1.1

2. Reference Code Requirement that has been determined to be excessively burdensome:

USAS B31.1.0 Power Piping Code (7/67), Section 136, including Table 136.5.1. This section requires piping installations to be inspected prior to service to the extent necessary to assure compliance with engineering design, and with the material, fabrication, assembly, and test requirements of the Code.

ASME Boiler and Pressure Vessel Code Section XI, 1989 Edition; with no addenda, Article IWA-2411, Preservice Inspection. This section requires that the preservice inspection plan comply with the adopted Code 36 months prior to the docket date of the construction permit.

ASME Boiler and Pressure Vessel Code Section XI, 1989 Edition; with no addenda, Article IWD-2200. This section states that all examinations required by the Article, except pressure retaining components up to the first isolation valve (Item D2.10 of Examination Category D-B, Table IWD-2500-1), shall have a preservice examination prior to initial plant startup.

3. Basis for requesting relief:

In accordance with 10 CFR 50.55a(a)(3)(ii), this request for relief presents the significant level of hardship, without a compensating increase in the level of quality or safety, which would be incurred as a result of performing preservice examinations for Keowee Hydro Station. IWA-2411 and IWD-2200 requirements cannot be met since Keowee Hydro Station was constructed and operated prior to the existence of ASME Section XI.

Prior to June 1992, there were no ISI Class assignments for the subject Keowee Hydro Station systems. In order to meet the requirements of USAS B31.1.0, every joint in the station would be required to be examined. Performance of preservice examinations on the Keowee mechanical systems will result in excessive burden for the following reasons:

1) Reduces availability of the emergency power source for Oconee Nuclear Station. The unavailable hours accrued to perform the tests would be such that NRC Station Blackout availability requirements would not be met. The systems would have to be isolated, drained, tested, and refilled to perform the test.

2) Accessibility for preservice examinations requires extensive destructive measures. Preservice inspections have to be performed on the systems prior to embedment in concrete. Since much of the piping in the station, as well as the spiral case, have been embedded, it is not practical to perform these inspections.

3) The large number of joints in the systems requires excessive time and resources to inspect. There are seven systems listed for this relief request. Each system listed for this relief request makes the ONS emergency power source unavailable when the system is removed from service. Hundreds of joints would have to be inspected within 72 hour Technical Specification Limiting Conditions for Operability (LCO).

Preservice examinations were most likely performed for the Turbine Guide Bearing Oil System, the Governor Oil System, the Governor Air System, the Turbine Sump Pump System, and the Turbine

Generator Cooling Water System based on the Duke Power Piping Specifications for Keowee. The specification for the hydraulic turbine and governors, KS-200, requires pressure testing of components and applicable NDE requirements such as 100% radiography of the spiral case. This documentation has not been found to date. The spiral case construction procedure calls for radiography in accordance with ASME Section VIII.

4.0 Alternate Examination:

No alternate preservice examinations are proposed. The time frame involved in draining, testing, cleaning, and refilling systems normally containing oil or air to perform hydrostatic testing adversely affects availability of the emergency power source for Oconee Nuclear Station. USAS B31.1.0, 7/67 edition paragraph 137.1.2(a) states, "An initial service leak test and inspection is acceptable when other types of tests are not practical or when leak tightness is conveniently demonstrable due to the nature of the service". The reliable operation of the station for the past 24 years, the constant operator rounds which inspect for leakage (OP/0/A/2000/043, Attachment 2), and the implementation of the Inservice Inspection program in November 1995, provide assurance that the piping systems can perform adequately under the Duke Piping Class F category.

5.0 Acceptability of proposed alternate testing with respect to the level of quality and safety as well as public health and safety:

All the safety related piping systems at Keowee Hydro Station were constructed under USAS B31.1.0. The spiral case was constructed under ASME Section VIII. The piping used at Keowee Hydro Station will function as designed and is fully qualified for the conditions expected to be present at Keowee Hydro Station during and after an accident. This position is based on years of station operation without piping leakage, and load rejection testing and emergency starting which place the spiral case and operating systems in their most demanding conditions. Considerations in this qualification include material compatibility, pressure/temperature rating, and welding personnel qualifications. For the piping systems, there is little difference in the testing requirements required by the construction codes as compared to ASME Section XI.

The piping has provided reliable service for Keowee Hydro Station for a period of 24 years. The placement of these piping systems into the ISI Class 3, Duke Power Piping Class F program will provide additional assurance with respect to the piping integrity.

Not performing the code required preservice examinations does not decrease the level of public safety, or any level of quality, associated with the operation of the systems at Keowee. The inservice reliability and increased level of planned inservice inspections provides an acceptable level of assurance for future operation.

6. Implementation schedule:

The subject piping systems have been incorporated into the Oconee Nuclear Station Unit 3 Inservice Inspection program. The piping systems are now Duke Piping Class F, ISI Class 3 and all repairs, replacements, and modifications on these systems will be in accordance with the USAS B31.1.0, 7/67 edition. In service examinations and testing will be done in accordance with ASME Section XI, 1989 edition.

The spiral case was constructed under ASME Section VIII. It is now considered Duke Piping Class F. Replacements, repairs, and modifications conducted on the spiral case will be conducted in accordance with ASME Section VIII, 1965 Edition. In service examinations and testing will be done in accordance with ASME Section XI, 1989 edition.

Implementation of Code rules is in effect at this time.

Requested By: Walter Leed Lawrence Date: 7-8-96

Reviewed By: Basil W. Cox Jr. Date: 7/8/96

QA Reviewed: R G Lowe Date: 7/10/96

Approved By: Barry Guthrie Date: 7/22/96

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ATTACHMENT 1
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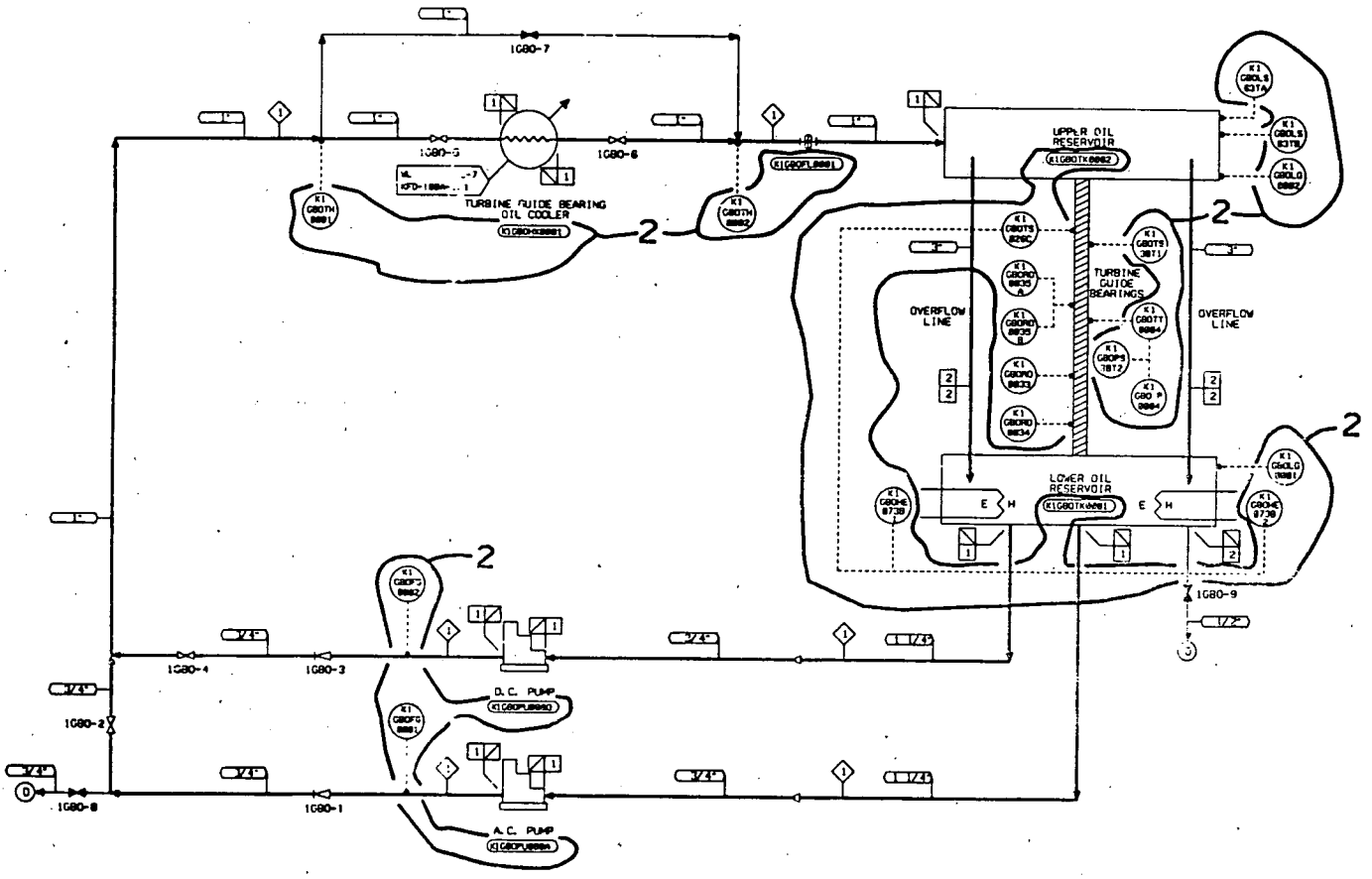
KFD-101A-1.1

TURBINE GUIDE BEARING OIL SYSTEM

FOR INFORMATION ONLY



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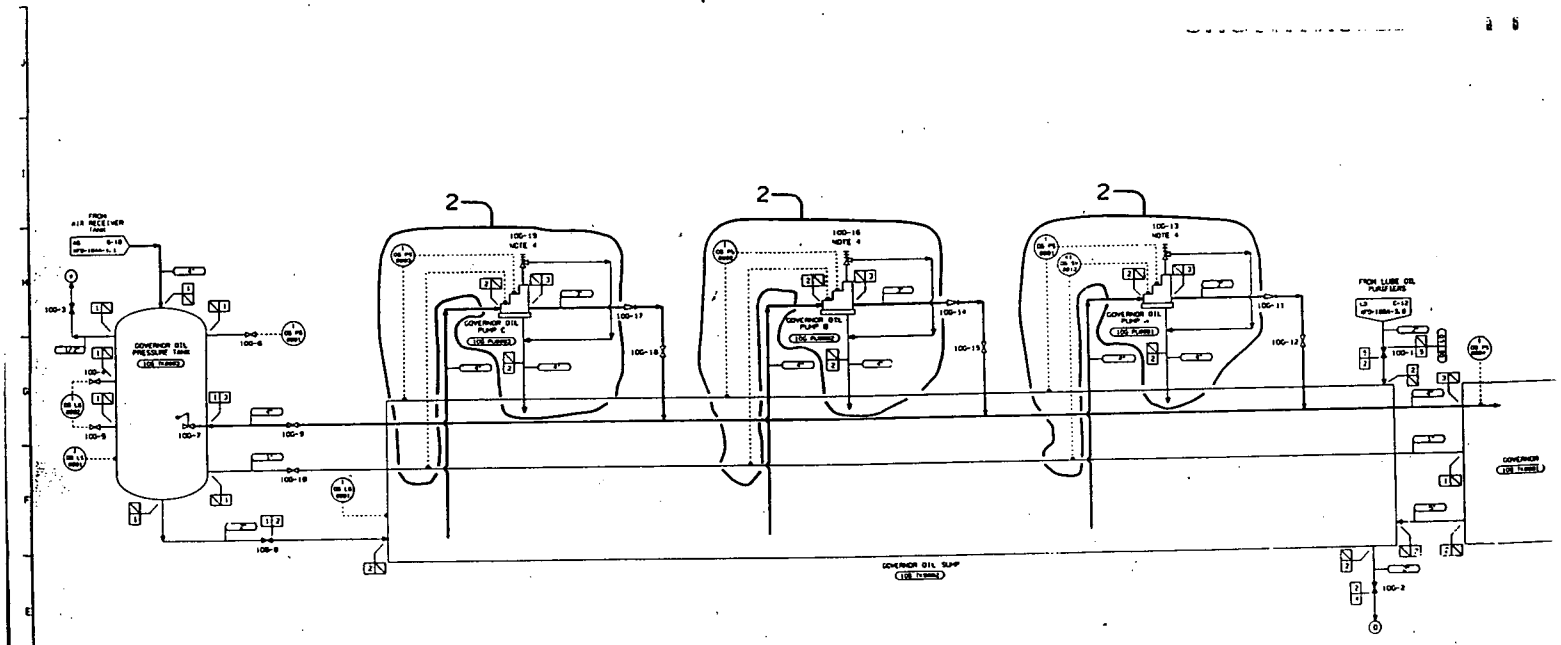
KFD-105A-1.1
GOVERNOR OIL SYSTEM
FOR INFORMATION ONLY



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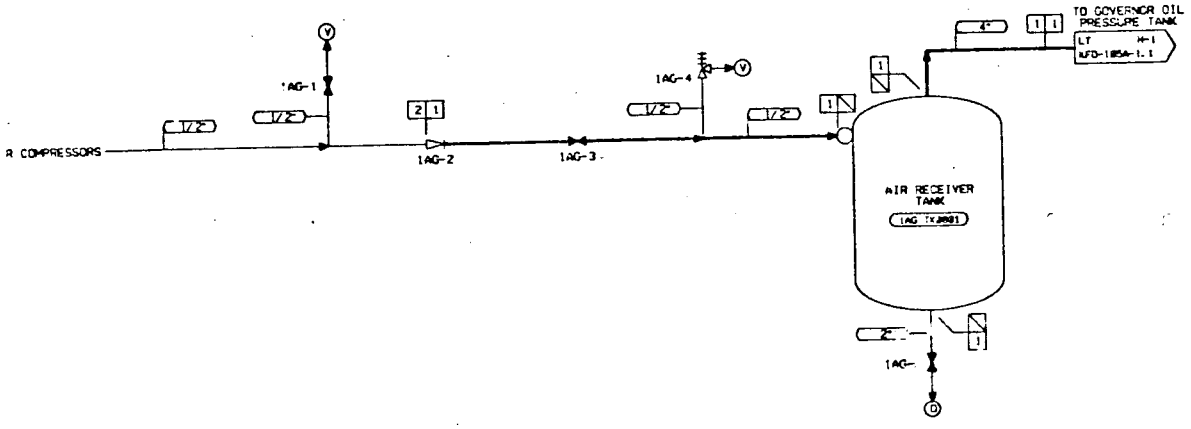
GOVERNOR AIR SYSTEM

FOR INFORMATION ONLY



RELIEF REQUEST 96-08-M
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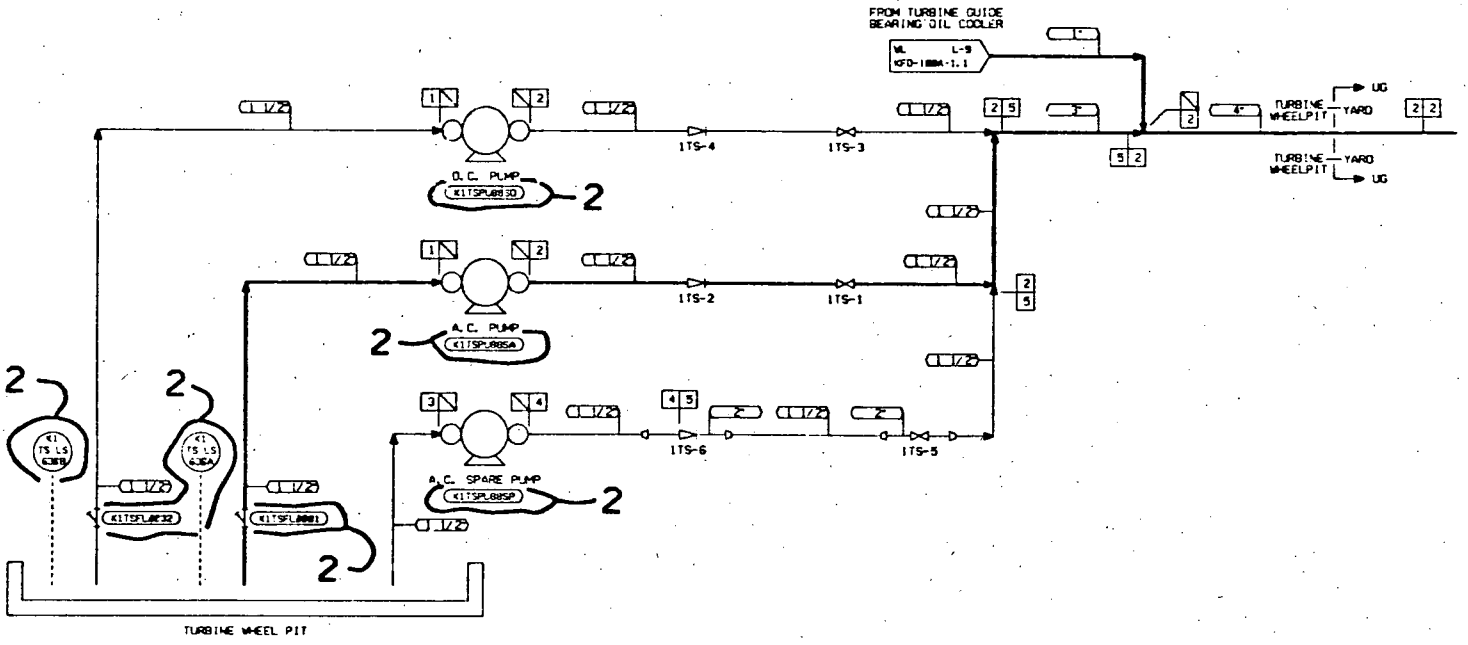
TURBINE SUMP SYSTEM

FOR INFORMATION ONLY



RELIEF REQUEST 96-58 M
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ATTACHMENT 1

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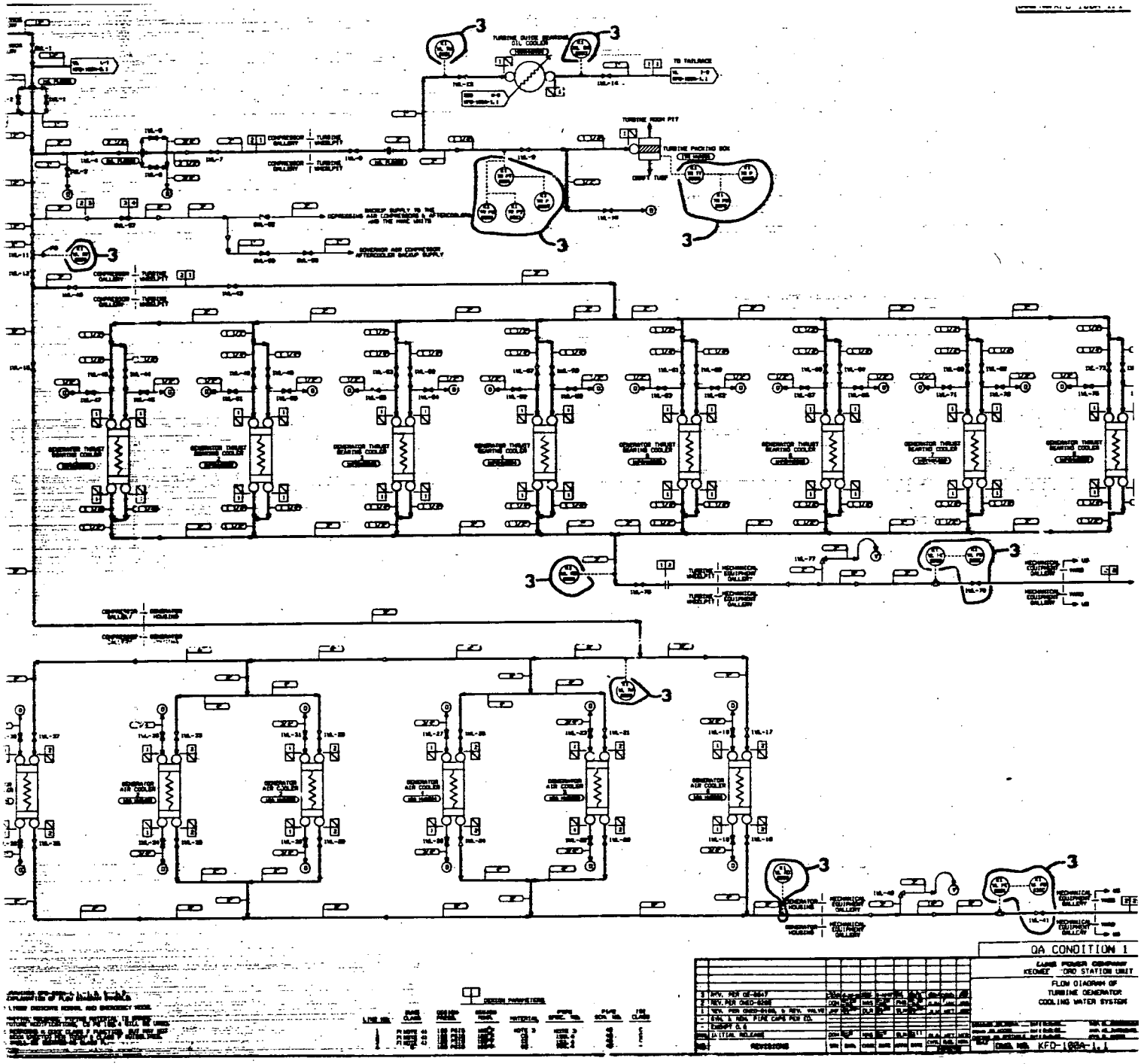
KFD-100A-1.1

TURBINE GENERATOR
COOLING WATER SYSTEM

FOR INFORMATION ONLY



RELIEF REQUEST 96-~~05~~ KM 04

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KM-200-0017

SPIRAL CASE

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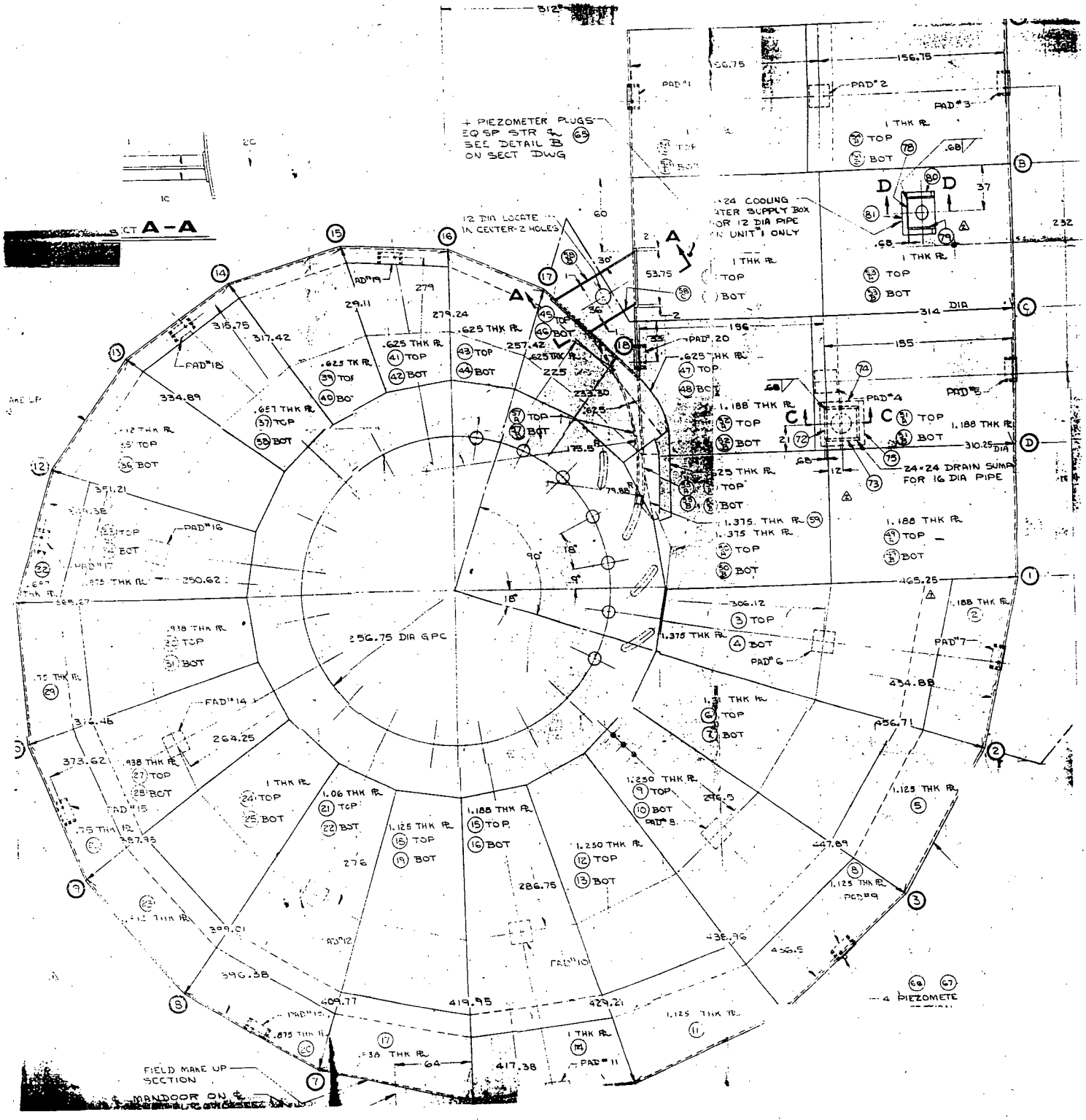

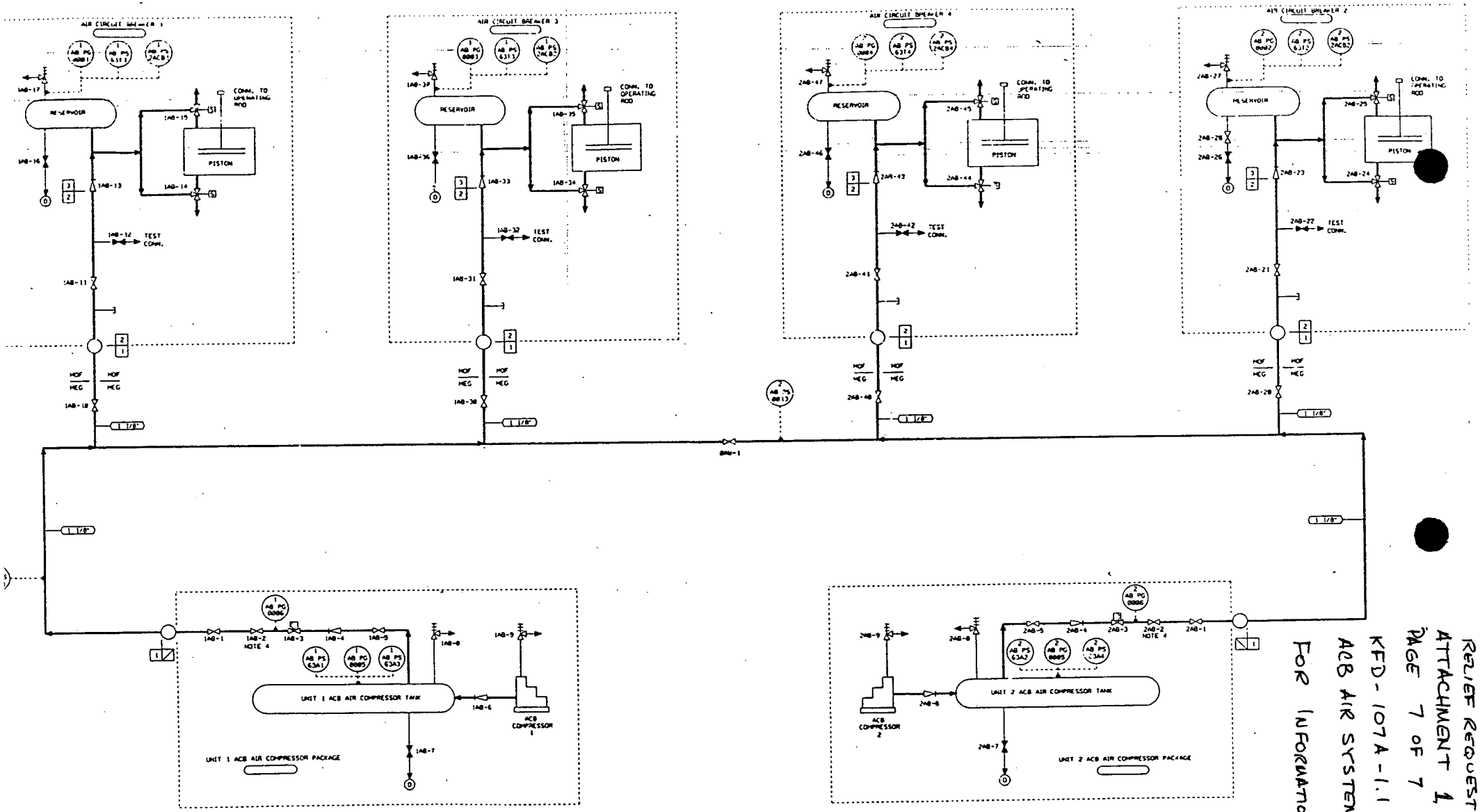

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KFD-107A-1.1
ACB AIR SYSTEM
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